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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,554

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7590

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EXAMINER

LISTVOYB, GREGORY

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/590,554	Applicant(s) CHRISTEL ET AL.	
	Examiner GREGORY LISTVOYB	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 11-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-9, 11-16 and newly added claims 18-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Christel (W02004/055093, cited with equivalent US 2006/0147666) herein Christel in combination with Encyclopedia of Polymer Sci and Tech, vol 2, page 518, herein Encyclopedia, and Pelletizing systems options for extrusion (Extrusion Auxiliary Services), herein Pelletizing Systems and Culbert et al (WO 03/031133 cited with equivalent US 7193032) herein Culbert (all cited in the previous Office Action, necessitated by Amendment).

Christel discloses a method for the manufacture of a partially crystalline polycondensate (PET, see line 0030, meeting the limitations of Claim 6), comprising the following steps:

a) Manufacture of a polycondensate prepolymer melt with IV value of 0.15 to 0.4 dl/g (see line 0040, meeting the limitations of claim 7);

b) Formation of granulates and solidification of the polycondensate- pre-polymer melt, by means of a granulation device, wherein the granulates is cut upon exit from a nozzle

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of the granulation device; c) Raising of the degree of crystallization of the prepolymer granulates; and d) Raising the molecular weight of the granulates by means of solid phase polycondensation (see lines 0071-0074), (both c) and d) processes take place simultaneously at high temperature, meeting the limitations of Claim 16)

characterized in that in the step b), granulates with a mean diameter of less than 2 mm, typically between 0.4 and 1.9 preferably between 0.7 and 1.6 mm (see line 0057, meeting the limitations of Claims 2 and new Claim 18) are formed (see line 0039).

Regarding the new limitation of claims 1 and 19, claiming a temperature between steps b) and c) above $\frac{1}{4}$ of T_m , Christel teaches temperature of above 205C (see line 0072).

Regarding Claim 9, Christel discloses that crystallization step c) is carried out in a fluid bed or fluidized bed reactor with the action of a fluidizing gas (see line 0070).

Regarding Claims 13 and 14-15, Christel discloses more than 94% of dicarboxylic acid component and more than 98% of ethylene glycol (see lines 0053-0054).

Regarding Claims 3-5 and 11, Christel does not disclose that granulate is cut upon exit from a nozzle, use of circumferential knife and water jet.

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Encyclopedia and Pelletizing System teaches standard granulation procedures with the above knife and water jet.

It would have been obvious to a person of ordinary skills in the art to use standard granulation technique, such as using nozzle with multiple holes, circumferential knife and water jet, since the related equipment and experience are broadly available.

Regarding claim 8, Christel teaches that solidification shall proceed in such a way that no crystal structure is obtained with excessively large crystallites, which would require high processing temperatures.

However, he does not disclose a degree of PET crystallization and that the temperature of process b) and c) does not fall under 1/4 of melting temperature of PET.

Culbert discloses a process for controlling crystallization of polyesters (PET) with their water content. Culbert achieves the required crystallization by contacting PET with~ water, whereas the lowest temperature of PET treatment is 60C (T_m of PET is 240C) (see Example 1). At certain conditions (10min under boiling water, see Example 3) no visible crystallization occurs.

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It would have been obvious to a person of ordinary skills in the art to use Culbert's pretreatment of palletized PET prepolymer in order to achieve low (less than 10%) degree of crystallization in order to avoid high processing temperatures.

Culbert does not openly disclose that his process is continuous one.

However, it would have been obvious to a person of ordinary skills in the art to modify batch process to continuous one (see *In re Dilnot*, 319 F.2d 188, 138 USPQ 248 (CCPA 1963), where the court held the claimed continuous operation would have been obvious in light of the batch process of the prior art).

Claim 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Christel in combination with Culbert, Encyclopedia, Palletized Systems and Duh et al (US 5478868) herein Duh.

Christel discloses a method for the manufacture of a partially crystalline polycondensate (see discussion above).

Encyclopedia and Pelletizing System teaches standard granulation procedures with the above knife and water jet.

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Culbert discloses a process for controlling crystallization of polyesters (PET) with their water content. Culbert achieves the required crystallization by contacting PET with~ water, whereas the lowest temperature of PET treatment is 60C (Tm of PET is 240C) (see Example 1).

Christel, Culbert, Encyclopedia, Palletized Systems do not disclose foamed polyester granules.

Duh discloses process, where foamed PEN prepolymer was prepared. Use of foamed prepolymer allows to decrease solid state polymerization temperature to achieve the same target of IV (see Column 6, line 40).

Therefore, it would have been obvious to a person of ordinary skills in the art to use foamed prepolymer allow to decrease solid state polymerization temperature to achieve the same target of IV.

Response to Arguments

Applicant's arguments filed on 2/11/2008 have been fully considered but they are not persuasive.

All the Applicant's arguments drawn to the point that Culbert's process is a continuous one.

However, as noted in the body of the Rejection, it would have been obvious to a person of ordinary skills in the art to modify batch process to continuous one (see *In re Dilnot*, 319 F.2d 188, 138 USPQ 248 (CCPA 1963), where the court held the claimed continuous operation would have been obvious in light of the batch process of the prior art).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GREGORY LISTVOYB whose telephone number is (571)272-6105. The examiner can normally be reached on 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Rabon Sergent/
Primary Examiner, Art Unit 1796

GL
